

OBSERVATIONS
ON THE PROPERTIES
OF THE
AIR-PUMP VAPOUR-BATH,
POINTING OUT THEIR EFFICACY
IN THE CURE
OF
GOUT, RHEUMATISM, PALSY, &c.
WITH CURSORY REMARKS ON
FACTITIOUS AIRS,
AND ON THE IMPROVED STATE OF
MEDICAL ELECTRICITY,
IN ALL ITS BRANCHES, PARTICULARLY IN THAT OF
Galvanism,
AND
THEIR EFFICACY IN VARIOUS DISEASES.

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STRENGTHENING

ON THE PROPERTIES

OF THE

AIR-PUMP LABORATORY

POINTING OUT THEIR THEORY
IN THE CASE

OF

GOVT. EXPERIMENTAL WORKS

AND THE RESULTS THEREOF

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It has been often and justly remarked of *Medical Science*, that, till of late years, few discoveries of general practical utility, had marked its progress. It was indeed, always believed by the wise, and assented to by the pious, that divine wisdom and goodness, had provided abundant store of adequate remedies for all the maladies incident to humanity; and had endowed man with such intellectual powers for research and investigation, as would enable him to sieze and apply them, to the beneficent purposes, for which they were intended. This impression, so strongly and almost universally felt, was for many ages, by the prejudices of practitioners, and the weakness of their patients, rendered of little benefit to mankind. The former, bred up in the study of a system, sanctioned rather by the authority of great names of ancient or elder times, than by its intrinsic wisdom and excellence; were content to seek reputation by passive acquiescence in the judgment of those who had gone before them, and a servile imitation of their practice. The comparative ease, with which fortune, and even fame, could be acquired by following in a beaten track, seems to have prevented the professors of the healing art from perceiving, that any system of medicine, of mere human origin, however species and profound, which at-

tempted to fix bounds to knowledge, and limits to discovery, must ever rely for its chief support, on the power and bigotry of prejudice.

This sluggish, selfish, and stagnant feeling, among medical men, appears with few exceptions, to have continued for ages; and sufficiently accounts for the science of medicine having so long remained apparently stationary. The inadequacy of the remedies in various disorders to which they were applied, was daily detected by failure and miscarriage; but still, such was the power of indolence, or force of prejudice, that any deviation from prescribed rule—any attempt at improvement, was deemed, a dangerous, and unpardonable innovation.

This defect in the practice of regular medicine, held out an irresistible temptation to empirics of all descriptions, who, in the absence of medical education of any kind, supplied the want of skill and experience, by ignorance and presumption. This active and enterprising class of practitioners having secured a footing, soon began to pour forth a profusion of infallible nostrums, for the cure of every human complaint. Though they promised every thing, and performed nothing, or worse than nothing, their success in the participation of fees, was equal to their arrogance. Nor was this to be wondered at—health, the choicest gift of heaven, and without which all the other enjoyments of life are insipid, has ever been held too precious to be parted with, while their remains a

solitary twig on which the dejected can hang hope. Credulity, and incredulity, are alike the offspring of ignorance, and from a natural but strong desire of life in the afflicted, the Quacks, who promised to still all their wailings got possession of a vast portion of medical practice, while the regular physician who adopted only the recipes of former times, and knew no other healing stores, than such as were to be found in the national pharmacopeia, frequently failing in the application of his remedies, lost ground in private opinion, and public confidence.

The labours of the Quacks, however, were not wholly unproductive of advantage to mankind. Though destitute of all the qualities that distinguish the accomplished physician—such as learning various and profound, a thorough knowledge of the animal economy, extensive medical experience, combined with mild and soothing manners; yet the quack sometimes blundered by accident on something, that had at least the appearance of a cure, and which, however delusive, acquired him at once, profit and reputation. This rapidly increasing race of interlopers, at last roused the regulars from their contented slumbers—the latter said—“*Fools rush in where angels fear to tread*”—but, what was still worse, they had the cutting mortification to feel their own influence on the wane, and to crown their misfortunes, their gains daily diminishing. Stimulated, therefore, by a sense of interest, and at the same time, ashamed

of the triumph of an inglorious rival, the regular practitioner, was at last compelled to think for himself, to explore new sources of information, and of course, increase the general stock of medical knowledge. Thus even Quacks, with all their ignorance and presumption, contributed to the advancement of science.

Such, or nearly such, was in general the state of medical science, at the commencement of the present reign. Since that period, however, what with the knowledge acquired by *propitious accident*, and by the spirited efforts of independent and superior minds, the dominion of science has been vastly enlarged, and a flood of light has been poured upon the world.

It is not within the limits of my design, even to enumerate the various scientific discoveries, which recent times have brought to light, and which have led to an improved system of philosophy, teeming with benefits to the human race. Sixty years ago, who could have believed that air and water would be found to be compound bodies, the constituent principles of which might be rendered applicable to so many useful purposes?—About the same period, who could have conceived the vast and various powers of the steam engine, now so fully developed, and so generally known?

These discoveries may be deemed the fruits of inquisitive research, directed by sound judgment, and ardent feeling: but, though we are indebted for these, and many other important improvements

in science, to the persevering efforts of superior minds, released from the restraints of prejudice—yet, there are still some, equal at least in magnitude and utility, the knowledge of which, we owe to chance, or rather in the language of rational piety—to providence. The knowledge of the vaccine disease, a discovery, which has conferred more benefits and blessings on suffering humanity, than almost any other to be found in the records of time, had no other origin. This is a fact, that the ingenious, the patient, and benevolent *Jenner* himself, does not hesitate to acknowledge. His indefatigable industry, his perseverance “through good report and evil report,” while they establish his title to the character of a benefactor of mankind, prove him at the same time, to be pre-eminently qualified to diffuse a knowledge of this important discovery, over the whole habitable globe.

The discovery by *Galvani* of a new principle in animal electricity, which opens so wide a field for philosophic improvement, and which promises in its practical results to be as beneficial to mankind as the vaccine system; we owe to the same cause, which produced the latter. So far, we are wholly indebted to providence for discoveries of vast importance to the world. These phenomena in nature, however, had a powerful tendency to awaken curiosity, to stimulate enquiry, and rouse exertion. The philosophic of all countries, as if by a common impulse, started in the race of disco-

very, and hence may be traced the amazing improvements in electricity, which form the chief boast and pride of modern times. The great *Franklin*, for philosophical and moral purposes, first taught the world, by his discoveries in electricity, to subject the thunder of Heaven to the power of man. Since his time, a whole host of eminent physiologists scattered over Europe, have contributed to throw new lights on every branch of this important science.

The general result of all these recent and astonishing improvements in electricity, it would be difficult to sum up in few words. The unformed, however, may form some tolerable idea of their own, from the following summary. It appears then to be a fact, established by a thousand experiments—that there is a fluid far more subtle than air, which is every where diffused through space, which surrounds the whole earth, and which prevades all, even its minutest parts. Such is the extreme fineness, velocity, and expansiveness of this active principle, that all other matter seems to be only the body, and this the soul of the universe. It produces and sustains life throughout all nature, as well in animals, as in vegetables.

But among the great purposes electricity answers in the general economy of nature; both in the production and preservation of animal and vegetable life, its medical powers in the cure of a vast variety of human maladies, is, of all its other properties, the one, most beneficial to mankind.

“It gives and preserves,” says a celebrated physiologist, “a proper tone to the vessels. It promotes all secretions, keeps every part in motion: it pervades the whole animal system, producing great variety of effects—numberless vibrations in the solids, and fermentations in the fluids.” Indeed, it would not be any extravagant hyperbole to assert, that electricity seems to be the grand *Desideratum* in physic, from which we may expect relief, when all other remedies fail.

The invention, the beneficial effects of which, in the treatment of many diseases, it is the intention of the following pages to point out, will, when generally known, prove of no little consequence to mankind, as its object is of the last importance. The apparatus of the *Air-Pump Vapour-Bath* comprehends, and, for the *first time*, unites the effects of *fomentation*, and the *cupping-glass*, two of the most powerful external means that have ever been resorted to, for acting on disease. Water and air, which till lately were thought simple and undecomposable bodies, are the means by which its powers are put in action. The first is made the vehicle for conveying the matter of heat into the system, and *increasing the force of the circulation, for relaxing spasmodic contractions and removing obstructions; and, at the same time, for giving tone to the vascular system.* The medical cases to which air may be applied, are extensive beyond calculation, whether regard

be had to the circumstances of temperature, or of an increase or diminution of its natural pressure. It is certain, that the removal of the atmospheric pressure is, in many cases, attended with the most salutary effects, and the Air-Pump Vapour-Bath is, beyond all doubt, the most powerful agent of the kind that has ever yet been used. Indeed, it is founded on the unerring principles of nature, clearly supported by reason and philosophy, and has therefore made its way in the world, unaided by any of the arts of finesse, or the tricks of chicanery.

One of the most obvious properties of air is its elasticity. This property might be exemplified by innumerable experiments. A very easy and convincing one is, merely to squeeze a full blown bladder between the hands, to which the enclosed air offers a very sensible resistance, while it is at the same time reduced into a smaller volume; but, when we cease to compress the bladder, it immediately recovers its original figure, being expanded by the elasticity of the air within. The air exerts its elasticity equally in all directions, as is evident from the spherical figure of soap bubbles, blown from the bowl of a tobacco-pipe—an experiment, which, though frequently the amusement of boys, will not appear trifling, when it is recollected, that it afforded to the immortal *Newton* no inconsiderable aid, in his investigation of the theory of colours. The same globular figure is assumed, and for the same

reason, by melted glass when inflated by the breath, blown through a long tube. Hence bottles, especially when blown thin, would be spherical, if different shapes were not given them by the resistance of the moulds in which they are cast: and, for particular purposes, they are sometimes allowed to retain their natural figure, under the appellation of glass globes.

To what extent the air is capable of compression or expansion, has not been with certainty ascertained. *Dr. Hales*, by employing a press, forced it into one 38th part of its former volume; and, by enclosing some air along with water in a hollow ball of cast-iron, and exposing it to frost, which most powerfully dilates water, while changing into ice, he reduced the air into 1838 times less space, than it occupies in its ordinary uncompressed state. Now, since air is about 830 times lighter than water, it must, in the experiment just mentioned, have had more than twice the specific gravity of water—that is, a cubic foot of air, thus compressed, must have been more than twice as heavy as a cubic foot of water, and must accordingly have weighed above 125 pounds.

The expansion of air in consequence of its elasticity, is no less surprising. *Mr. Boyle*, in one of his experiments, found that it occupied 8000 times its former volume—and, on another occasion, that great experimental philosopher brought it to expand itself into no less than 13680

times as much space, as it originally filled. This effect was produced merely by including a portion of air in a pneumatic apparatus, and removing the pressure, so as to allow it to expand by its elasticity. But by the addition of heat, this quality of the air is much increased, as may be easily proved by holding a bladder partly inflated before the fire; for no sooner is the included air affected by the heat, than it begins to expand itself, and to distend the bladder. According to the experiments of Sir George Shuckburgh, this expansion is increased at the rate of about the 440th part of its volume for each degree of heat applied, from that of temperate, on the scale of Fahrenheit.

Air, when combined with water and exposed to heat, forms steam or vapour, which, by employing great degrees of heat, has its elasticity so much encreased as to become one of the most powerful mechanical agents in nature; a fact familiar to persons conversant in the management of steam-engines. At the heat of boiling water, steam is above three times rarer than common air, and possesses about the same elasticity as that fluid.

Air being a material substance, must of course possess weight, and consequently pressure; but philosophers before Galileo and Torricelli, could not precisely ascertain the quantity of that pressure. The former of these ingenious Italians made many interesting experiments on water-

pumps, whose operation depends entirely on the pressure of the atmosphere; and the latter was so happy as to devise that brilliant experiment, which gave rise to the barometer, and is often dignified with his name. This valuable discovery gave a new and decisive turn to pneumatical inquiries; for Torricelli found on filling a tube, closed at one end, with mercury, and then stopping the open end with his finger, and inverting the tube in a bason of the same fluid, that the mercury was kept at the height of about 30 inches in the tube, by the air pressing on the mercury in the bason. Now a cubical inch of that ponderous fluid weighs nearly half a pound avoirdupois; consequently a column of mercury thirty inches high and one inch square must weigh about 15 pounds, which is therefore equal to the pressure of the atmosphere upon every square inch of surface.

Hence will appear the indefinitely various degrees of pressure, which we can employ in the application of the Air-Pump Vapour-Bath. The surface of an ordinary man's body may be estimated at about 2160 square inches, which multiplied by 15 gives 32400 pounds, or nearly $14\frac{1}{2}$ tons. This enormous pressure would crush us in an instant, if it were not exactly counterbalanced by the spring of the air, or other elastic fluid, diffused through every part of our bodies; just as the pressure on the outside of a full blown bladder is sustained by the re-action of the air

within; or to give a still more apposite instance, as the pressure on the surface of a shrivelled apple is accurately counterpoised by the elasticity of the air contained in its pores. But now, if this full blown bladder and shrivelled apple be placed under the receiver of an Air-pump, we shall find that as the air is exhausted, the bladder will be more and more expanded, till it burst, and that the wrinkles on the apple will gradually disappear, and its surface become plump and turgid. As an instance perhaps still more in point, we mention a common experiment. If an egg punctured in the small end be placed in a wine-glass with the pin-hole downwards, and subjected to the action of an Air-pump, the elasticity of the air naturally enclosed in the egg, will force its contents through the perforation; but on re-admitting the air into the receiver, its pressure will drive the contents back again into the shell. Thus also it is with a small part of the human body subjected to the operation of the syringe-cupping-glass, which will illustrate our meaning better than the ordinary one. In proportion as the air is exhausted by the syringe, the fluids rush towards the small portion of surface, from whence the atmospheric pressure is removed, with such force as to occasion a tumor, and thus the blood flows through the wounds previously made by the scarificator. From these facts, and the reasons assigned for them, the transition to the Air-pump Vapour-bath, is natural and easy. For, except

with regard to the use of the scarificator, which is rendered unnecessary from the extent of surface included in the apparatus; its effects are exactly similar to those of the cupping-glass, with the additional advantage of fomenting the part.

With regard to animal, vegetable, or mineral poisons; though opportunities of judging are happily rare, it is clear, from the obvious power and properties of this apparatus, that, if early applied, much dependence may be placed in its efficacy, for their removal. If, as has been often maintained, sucking a poisoned wound with the mouth has had an effect, how much greater must the power of this apparatus be? to say nothing of the danger incurred by the person, whose mouth is applied to the part. On the important subject of suspended animation, as the principal mean of restoring the vital functions, is the application of heat; it would be difficult, if not impossible, to point out any method, by which it can be thrown through the system so completely, or in so gradual a manner, as by this apparatus.

Many of these remarks on the power and properties of the Air-pump Vapour-bath, are taken from the excellent treatise of *Dr. Blegborough*. That Gentleman was the first who addressed the public on the subject, and I have his permission to make what use of his ideas I may deem most conducive to the general good, it being his ardent wish to diffuse, as wide as possible, the knowledge of a discovery, which he has ever consi-

dered of the greatest importance to mankind. It does not, however, either accord with my design, nor is it within my competence, to indulge in any thing like eulogy, on the medical character of *Dr. Blegborough*. His professional reputation stands too high to receive any addition from my pen—but, as the attention he has paid to the Air-pump Vapour-bath, and the extensive experience he has had of its efficacious powers, may not be so generally known, it is but bare justice to observe, that, as no man is less likely to be deceived himself, or to mislead others by premature opinion, so none can be more eminently qualified to pronounce a sound and decisive judgment on the subject.

That Gentleman, in his letter to *Dr. Bradley*, on the subject of the Air-pump Vapour-bath, thus expresses himself, “ This apparatus, if I am not greatly deceived, is calculated to produce excellent effects, in changing the action of diseased parts. Indeed, I have little doubt, but it will rank among the first of the modern improvements in our art; and that under the superintendence of professional men, it will prove a powerful mean, not only of alleviating, but frequently of removing, many diseases which have been hitherto considered as incurable. As the apparatus comprehends, and for the first time, unites the effects of fomentation and the cupping-glass, two of the most powerful means of acting on disease, and that on a plan more extensive than was ever

before thought of, what effects may we not be led to expect, from so extended a combination?—Every day's experience is proving to us its efficacy, in gout, rheumatism, contractions of muscles, cutaneous and other diseases, particularly of the chronic kind. The peculiar construction of the machine, is adapted to the leg or arm only; but the principle extends much farther, and can be applied to any part of the body, by the intervention of glasses or otherwise. When, then, we consider, that, by such means, the pressure of the atmosphere might be removed from so large a surface, every square inch of which, sustains a weight of 15lb, the effects on the vessels circulating the fluids, in such parts, are too evident to need insisting on in these pages. A very obvious one is that the consequent temporary expansion of those vessels, from so great a pressure being removed, must give an opportunity for obstructions to give way, while at the same time, the progress of inflammation, is arrested."

The following letter from Dr. Hamilton, physician to the London Dispensary, addressed to the Proprietor, is quoted by Dr. Blegborough:

"DEAR SIR,

"I HAVE often, since the time I examined your machine for conveying a Vapour-bath to diseased limbs, and for taking off the pressure of the atmosphere, considered it and its probable effects with much attention; and, my opinion is, that it is likely to be of the greatest use to man-

kind, in helping obstructed vessels to unload themselves. *The mode in which it must act is certainly agreeable to sound theory ; and the more it is put in practice, the oftener will facts occur to confirm what I now say.* I not only view it as valuable to remove local affections of the extremities, but also to afford relief to other parts of the body, where obstructions may have taken place. There are some complaints, which would often be greatly mitigated, if not always removed, by its power in producing a general and copious sweat over the whole frame, such as in the diabetes, dropsy, and other maladies, where the skin is parched, dry, and hard. In general, it will be well to pump out the air gradually, and to see the effects of a partial exhaustion of the machine ; for its being done too suddenly, would allow the air in the circulating fluids to exert its spring with too great force, producing acute pain, &c. The machine, by having a condensing pump fixed to it, might be used as a bracer, and that with beneficial and powerful effects. Was I not so far advanced in life, and so much engaged in other avocations, I would with gladness have devoted my time to the use of it ; thoroughly convinced that it would prove useful to the distressed, and honourable to myself. Wishing you, dear Sir, the favour of God, which is better than life, and all that life contains.

I am,

Your friend and obedient servant,

JAMES HAMILTON."

"No. 7, Artillery-Place,
April 8, 1801.

P. S. It would be an unpardonable vanity in me to suppose that any thing I could say would add weight and consideration to the suffrage of so able a judge, whose respectable testimony has since been corroborated by the favorable opinions of some of the first physicians and surgeons in this metropolis. The late learned and ingenious Dr. Garnett, in particular, was so much struck with the value of this discovery, that on hearing of it, he immediately applied to me for one of the machines, which he forthwith exhibited and explained in the lecture on Gout, which made one of his interesting course on Zoonomia, now printing at the press of the Royal Institution, for the benefit of his orphan children.

R. B.



Such were the opinions of these eminent physicians, some eighteen years ago, on the beneficial effects to be expected from the use of the Air-pump Vapour-bath—at a time too, when the invention itself, was comparatively little known. Since that period, it has not only received various and important improvements, but its extraordinary powers and efficacy in the relief and cure of many of the most dangerous disorders that can afflict humanity, have, induced some distinguished members of the faculty, not only to recommend it to their patients, among whom are to be found, personages of the first rank in

the kingdom, but to have applied it to themselves, with the greatest benefit. Indeed, by a widely extended practice, there is scarcely any thing connected with the subject, now left to doubt or conjecture.

To an ingenuous mind, it is at all times, a painful and difficult task to speak of one's-self; but, where confidence in skill is expected to be reposed in a matter so vitally important as health, some reference to qualifications ought to be given, that can be depended upon. On this delicate part of the subject, I can only venture to say, that I have from early life, with ardour and enthusiasm, devoted my time and talents, to the study of medical philosophy. In the progress of my experience, I have found, a judicious direction of that subtle and searching fluid, the most powerful of all agents for successfully grappling with the very worst of human maladies. This conviction, strongly impressed on my mind, induced me to dedicate many years of my time to the *gratuitous administration* of medical electricity, and galvanism, among the afflicted poor, and I can safely assert, with a success that seldom fell under, but often equalled my most sanguine expectations. My present varied professional practice in London, having in innumerable instances received the sanction and approbation of many of the most eminent and enlightened surgeons of the age, not only supersedes the necessity of saying any thing more for myself, but will also

enable the public to appreciate the nature of my pretensions; and to judge, how far my habits, my attainments, and experience, may, or may not qualify me, for conducting with beneficial effect, the operations of the *Air-pump Vapour-bath*.

Here it is proper to observe, that each application of the apparatus, takes up in general, somewhat more than an hour, that is, the fomentation occupies three, and the exhaustion one quarter of an hour, or a little more. The approach of pain is the criterion, which determines the sufficiency of the exhaustion: but this and other matters must be regulated by the discretion and skill of the practitioner, according to the circumstances of each particular case.



The following Cases, in proof of the efficacy of the AIR-PUMP VAPOUR-BATH, were published years ago by DR. BLEGBOROUGH, a Gentleman, well known to the world for his eminent professional skill, talents, and learning; and whose extensive experience in the use of that Apparatus, peculiarly qualified him to form a correct judgment of its powers. So thoroughly was that Gentleman convinced of the great benefits to be derived from the use of the Air-pump Vapour-bath, that he published a treatise replete with scientific views and sound reasoning, to recommend it to Public Notice—a practice, which he thinks it his duty to continue to this day.

CASES OF ACUTE GOUT.

I SHALL now state, Sir, a few cases out of a great number which have occurred to me lately, selecting those of such persons as are least difficult of access; and first, that of Mr. Seares, surgeon, of Half-moon Street, Piccadilly, to whom I am indebted for the following statement, which I shall give in his own words.

“ Half-Moon Street, May 31, 1802.

“ DEAR SIR,

“ SEEING in the Medical and Physical Journal, a letter of your's respecting a machine

for conveying a Vapour-bath to diseased limbs, I could not possibly think of withholding my testimony of its beneficial effects in gout ; I can speak of it feelingly and with gratitude, having experienced such relief from it myself, in a most violent attack of gout in the extremities.

“ In the winter of 1799, by being thrown out of my chaise, I received a violent contusion on the left foot, which terminated in a most severe paroxysm of the gout ; it confined me a considerable time, and rendered me unable to pursue my professional avocations : the dread of a future attack may be readily conceived. The following winter confirmed my fears, and I was visited by another paroxysm, with increased violence ; for, great as my sufferings were before, they were trifling indeed compared with what I suffered then. Fortunately, by mere chance, I heard that a gentleman at Pimlico, whom I knew, had received the greatest benefit from the application of the machine. I sent therefore to Mr. James, the proprietor of it, to hear from him the principles of its operation ; and as it appeared to me to be perfectly innocent, I was willing to embrace such a mode as would be likely to relieve my pain, and enable me more speedily to prosecute my professional duties. It succeeded beyond my most sanguine expectations, as on the evening previous to its application, I could not bear my feet to touch the ground : after the machine had been applied, I could press on them without

pain. The succeeding application was still more gratifying, as I could shortly afterwards walk with very little assistance about the room; and the next day I suffered only from stiffness, and the fear of reproducing an attack by any blow I might receive on the parts. This, however, subsided, and I was enabled in a day or two to attend to business. Grateful for the benefit I have received, I could not withhold giving you this hasty sketch. Without apologizing for its imperfections, I hope this, with other documents, will tend to make the machine more generally known, and I trust approved.

I am, dear Sir,

Your's obediently,

G. M. SEARES."

" To Mr. BLEGBOROUGH."

Mr. SEARES, after an interval of two years, during which he has enjoyed an uninterrupted state of good health, was on the 23d of September again attacked with another fit of the gout. He immediately had recourse to the machine; four applications of which were made on the 25th, the 26th, the 28th, and the 30th. After the third application he was enabled to resume, and has since continued, his usual activity in his profession. He is now (Oct. 15,) entirely free from all appearance of the complaint.

After the above statement of Mr. Seares, little further is necessary to be said on the acute stage of the disease, I shall therefore but mention one other case.

Mr. SMITH, No. 47, Oxford Street, on the 20th of March, was labouring under a most severe paroxysm of the acute gout. He has been subject to frequent returns of its attacks, which always continue for some time. The application was made on the 20th and 22d, under some disadvantages, and irregularities in point of exercise. But on the 23d and 25th it was applied again, under more favourable circumstances. The paroxysm entirely remitted, since which time he has continued very well; having entirely escaped the debility, which never failed to succeed former attacks, that were suffered to run their course under patience and flannel; and he resumed his business immediately. I hope I have given him such directions respecting his future regimen, as will make the machine unnecessary for a great length of time to come. It may not be amiss to add, that Mr. Smith considers the application, independent of its utility, as no inconsiderable luxury.

CASE OF IRREGULAR GOUT.

I AM happy in having rendered Mr. Mortlock, of Cambridge, much service in a complaint which comes under the above description. There seemed

a strong general gouty diathesis: his stomach was much affected; and he was taking a quantity of ginger every morning, a practice I could by no means approve, though much extolled by a certain worthy baronet. I gave him some general directions respecting regimen, and enforced the use of milk. The machine was applied fifteen times to his leg and arm. It seemed first to determine the affection to these two points, and soon to remove it altogether. He left town much improved in general health, as well as nearly cured of the particular affection. I went to make him a visit at Abington, near Cambridge; a fortnight after, a considerable thickening and hardness of the ancle had given way, and he was much better in general health. He gave me letters to some of his friends, one of which I shall take the liberty to transcribe.

“ Abington Hall, April 10, 1802.

“ DEAR SIR,

“ I KNOW not whether you are ever afflicted with the gout; but knowing it has been severely felt in your family, I have requested my friend, Mr. Blegborough, a surgeon in London, who is proprietor of a machine, which has done me very essential benefit, both for regular and irregular fits of the complaint, to wait upon you. I will thank you to introduce him to your surgeon; not only as he wishes to make the instrument known, but also, as you will by him, be

assured that it can do harm. It would give me great pleasure to see you here ; but I have long found so great a difficulty of detaining you at my house in Cambridge, when you were there, that I now almost despair of it.

I am, dear Sir,

Your's most truly,

JOHN MORTLOCK."

" To JAMES DENTON, Esq.
Brandon."

DERANGEMENTS OF THE FUNCTIONS OF THE BLADDER.

CAPTAIN RUSH, No. 25, Nottingham Place, New Road, Mary-le-bone, was relieved from a most violent affection of the bladder of long standing. The *constans mingendi cupido* was so severe, that he declared life was not worth the tenure. From the quantity of mucus discharged, the inner coat of the bladder must have been entirely abraded. It would be presumptuous in me to hazard an opinion respecting the causes, as various ones had been assigned by a number of gentlemen who had been consulted ; stone and gout among the rest. The affection, however, entirely ceased after a few applications of the machine ; to a trial of which Dr. Fraser, who was attending at the time, did not object.

“ Farthinghoe, near Brackley,
Northamptonshire, June 5, 1802.

“ DEAR SIR,

“ It is with much pleasure I inform you of the continuance of the great benefit I received from the application of your Air-pump Vapour-bath. To have given so much relief in so short a time, and that in a case the most unfortunate that ever man was afflicted with; a case that the first assistance could scarce give me any relief from, certainly discovers a power from which, under your directions, every good may be expected. It has been recommended and introduced as giving relief in gouty cases; but, although, as in my case, the gout formed a part of my complaint, yet be assured, Sir, that the other part of my complaint (inflammation of the neck of the bladder) was the cause from which my great sufferings proceeded.

“ As my physician, Dr. Fraser, who is one of the most liberal of men, attended me during the application of your remedy, and to whom I explained its effects in progression, I cannot do better than refer you to his testimony. I cannot omit acknowledging the candid and polite manner in which you pointed out the attention you thought necessary, during the course of my application; a circumstance much to be desired by any one making the trial. Accept, Sir, every good wish from

Your very obedient servant,

GEORGE RUSH.”

On what principle the application of the apparatus assisted in the above complaint, I shall not take upon me to affirm. Some will no doubt conclude that the affection was spasmodic. Whatever it was, it is certain that it had continued, with very little intermission, for several years. I merely give it as a fact; and think it necessary to state farther, that a recurrence of the symptoms, which were rapidly and daily increasing, has been checked by the same means; one of the machines having been sent to Farthinghoe for that purpose. And the Captain writes to me that he is again perfectly free from the complaint.

I remain, &c.

RALPH BLEGBOROUGH.

CASES OF ACUTE RHEUMATISM.

On the 20th of January, 1802, Mr. Clark, No. 18, Somerset Street, Portman Square, had been so severely afflicted with Rheumatism for many months, as not to be able to move without the most excruciating pain. It affected his breast, shoulders, and joints, and the muscles about the breast, so much that he was incapable of breathing without considerable difficulty; nor could he by any means stoop to take any thing from the ground, or bring himself perpendicular; but was under the necessity of inclining

forward at an angle of about 45 degrees. On the above date I first saw him; he had been under the care of regular men, and all ordinary means had been used without effect. He had visited Bath, and nothing seemed to have been omitted which promised relief. His pulse was quick but small; tongue white; skin dry, parched, and hard; considerable thirst, and no appetite.

I directed him to take half an ounce of Epsom salts, with half a drachm of magnesia, in two ounces of peppermint water; and took ten ounces of blood from the arm, ordering the application of the machine the following day. On the 22d in the morning, I found him much relieved. The blood shewed the inflammatory buff. There seemed a much greater freedom of circulation, and the pulse was more full and not so frequent; but the most remarkable change had taken place on the skin, which had become soft, moist, and perspirable. The patient could turn in bed, and his latitude of motion in other respects was much more considerable. The machine was applied in the evening of the 22d, and again on the 24th, on which day I ordered eight ounces more blood to be taken from the arm. The operation was mismanaged, and only two ounces were procured. On this day he repeated his draught, and on the following was so well as to induce me to inform him that he need not use the machine any more; as he could now bend his body almost as easily as in the

natural state, and was entirely free from pain. He, however, of his own accord, chose to have another application, which was made on the 27th; since which time he has remained remarkably well.

I shall state another case, as bleeding was employed in the above, though to a very small amount; yet it may, on that account, be objected to by some as not a fair one.

Thomas Pearse, a poor bricklayer's boy, Ward's Fields, New Road, Mary-le-bone, on the 13th of May last, had been confined to bed for eight weeks with this disease. I saw him at the request of a medical gentleman. He was unable to straighten his knees, which were much contracted and enlarged. His legs and thighs were literally worn to the bone; and such was the general debility, that little hope was left of its being possible that he should spring from the disease by any ordinary means; all of which had been duly administered. His left hand and arm had much of the appearance, and all the inutility, of a paralytic limb, except round the joints, which were greatly enlarged. The application was first made to the left leg twice, with considerable relief; then to the left arm twice; and afterwards to the right leg and arm, each once. His lost appetite began to return in proportion as the pain, &c. subsided. I found it necessary to regulate the porter he drank; but left him at liberty to eat any animal food they could procure for

him. He gradually recovered, and called on the 28th, at the houses of two medical gentlemen to return them thanks ; the one for recommending the machine to him, the other for his care and humanity towards him prior to the use of it. I have seldom met in practice with a circumstance more pleasant to my feelings than this last case ; that I was instrumental in restoring to this poor boy the use of his limbs, and to society an useful member, otherwise lost for ever, I firmly believe ; nor shall the united scepticism of the world persuade me to the contrary.

CASES OF PALSY.

JOHN ROUNEBERG, No. 11, James Street, Brook Street, a patient of the Mary-le-bone Dispensary, who, after having been formerly under the care of Dr. Thornton, physician to that establishment, and used among other things, the vital air without benefit, was sent to me by the late Dr. Garnett. He had been paralytic for two years, which led me to expect very little from the machine ; nevertheless, at the request of the Doctor, it was tried. The effect was very considerable ; for after six applications, he had so much more use of his arm, that he could lift it over his head, without the help of the other hand ; could grasp any thing firmly, and carry a large pitcher of water, which he was unable to do before. A general state of excitement, however, had pervaded

the whole system ; so that I deemed it prudent to desist from the application at that time. This general excitement, I had little doubt, was produced from the local one of the arm, by the increased circulation and capacity of the vessels of the part. As soon as it should have subsided, which was nearly the case, I intended to proceed, keeping in view the maxim, *Festina lenté* ; and hoped I should be enabled hereafter to give a still better account of a case, which, at that early period, I could not omit noticing without calling in question the judgment of Dr. Garnett, to which I owed the utmost deference.

The patient, however, gave me the slip, and got a situation somewhere in Somersetshire, as a cook, which had been his business before his misfortune, so that I heard no more of him. There was every reason to expect, from the progress which had been made by six applications, that I should have been able to have given a very good account of the case by this time ; but there is the less cause of regret, as I have it in my power to lay before my readers, the following still more apposite case.

October the 12th, 1802, Richard Jacques, No. 6, Little Mary-le-bone Street, about eighteen months ago, lost the use of both his hands : of the two, the right seemed most affected ; on the back of it, there was a large ganglion-like tumor, which, with other circumstances, made the case resemble that species of paralyzes, which succeeds

the painter's colic ; though we could not discover that he had been exposed to the influence of lead. He had been a patient of the Mary-le-bone Infirmary, for six months, and of the Middlesex Hospital for three : of course, all the common remedies had been skilfully applied, but unfortunately had not produced the desired effect. He was not at the above date, any more than he had been during the whole existence of the affection, able to exercise his occupation, that of a shoemaker. In the two months, preceding the above mentioned date, the application had been made two and twenty times. He received no great benefit with respect to motion, for the first twelve times ; though the tumor on the back of the right hand had been gradually decreasing. At this period, however, different sensations took place. The susceptibility of the parts had become much more considerable. He was seized with *Cholera morbus*, a disease at that time prevalent ; after which, the bowels, hitherto in a torpid state, became more naturally irritable. His countenance lost somewhat of its leaden paleness. The secretion of bile seemed evidently more considerable. A degree of painful itchiness in the affected parts, and considerable fever took place, exactly as happened in the case of Rounenberg ; which, as in that case, was the cause of suspending the application for ten days. The amendment, however, was such, as to make the poor fellow solicitous to persevere in the use of the means. He has now

so far recovered the command of his hands, as to be able to make three pair of women's shoes in two days ; and there is every reason to hope that he will be able eventually to finish the same task in one day ; as he was in the habit of doing, before he was seized with the disorder.

CASE OF CUTANEOUS DISEASE.

Miss Nicholls, No. 26, Margaret Street, Cavendish Square, authorises me to state that she was completely cured of the most inveterate herpetic ulceration I ever saw, which succeeded the small-pox, and had been of many years standing. The affection occupied the whole of the right leg, the discharge from which was excessive. The arms, face, and many other parts of the body were affected ; all of which were well before the leg, the part alone to which the apparatus was applied. Twelve applications were made between the 30th of June, and the 2d of August. No medicine was given, except one grain of Ipecacuanha three times a day, and that but for a small part of the time. The cure was progressive and complete ; for the parts affected remain perfectly free from the least appearance of irritation, and are now covered with a fine healthy skin.

CASE OF ULCER OF THE LEG.

About the middle of April last, I was desired by Dr. Sandiman to see a Mrs. Bell, from Hull,

with an ulcer on the leg. It had all the appearance of that sore which generally attends carbuncle. It was very extensive and throwing off large sloughs. The then circumstances, as well as the history of the case to that time, exactly corresponded with what takes place in carbuncle. It had commenced with a doughy swelling of a dead pale redness, implying want of power. The pain had been obtuse and burning, and the throbbings indistinct. There was great anxiety and prostration of strength. From the appearance of the sore, it would not have surprised me to have seen the arteries give way as they were completely exposed, and the ulcer was rapidly increasing in depth and extent. Under these circumstances, I did not think myself warranted in depending on the effect of the Air-pump Vapour-bath alone, though some cases of a similar nature since, have proved to me that I might have placed more dependence on it than I did. I conjoined with its application, which was made six times, between the 20th and the 30th of the month, the following plan, which I had often used before, in similar cases, but never with the same speedy effects. I wrapped up the leg after it came out of the bath, in a poultice of linseed powder mixed with common pepper, in the proportion of a pound of the former to a drachm of the latter, giving it a proper consistence with porter and lard. The system at the same time was invigorated with wine, bark, and opium. I never saw half the

change produced on a similar sore, in ten days, by the same means (without the bath) though I have often used them in such case. In the two first applications, the exhauster was not employed, lest the blood vessels should have given way. It was on the third application used slightly, and encreased every time afterwards. By the 2nd of May, the mortified parts had all separated, and it had become a healthy sore, discharging good pus. The patient now thought herself able to return home, and what was the ultimate event of the case I know not.

Many diseases are attended with local changes of a critical nature, which terminate in ulcerations of particular parts. This is frequently the case in the plague, and sometimes of the common typhus of this country, in which an anthrax or carbuncle is formed. The treatment of this ulceration is frequently attended with the greatest difficulty; and till the local derangement be somewhat changed, general remedies are often found of little effect; nay, not unfrequently even to encrease the mischief. By the use of the Air-pump Vapour-bath, the treatment of the sore can be made to keep pace with the general treatment of the system; and thus it will be found of the greatest benefit in all such cases.

This mode of treatment induces a speedy change and separation of the diseased parts; and by restoring a full and regular circulation, disposes to the renovation and healing of them.

SEVERE PAIN OF THE BACK AND HIP.

I cannot express my sentiments on this head better, than by laying before my readers the following communication.

“ SIR,

“ Understanding your are about to publish respecting the Air-pump Vapour-bath, I beg leave to send you some particulars concerning a case, which accidentally occurred to my notice, and which I think highly deserving attention.

“ Mrs. Miller, No. 3, Buckingham-place, Fitzroy-square, an acquaintance of mine whom I sometimes visit, though not in my professional capacity, had been severely afflicted with a constant and most excruciating pain in the back and the left hip, for the space of a fortnight. Though Mrs. Miller was at that time attended by Mr. Coates, of Howland-street; yet seeing her in such extreme pain, I took the liberty to suggest, that, in my opinion, the tepid bath might tend to relieve her; but at the same time begged that the sanction of Mr. Coates should be first obtained. This, however, could not be had, and for this good reason, that in the opinion of that gentleman it would be dangerous to use so much exertion as would be necessary to place the patient in the bath; for he had observed that the symptoms were always extremely aggravated by

the least motion. I now heard for the first time of the Air-pump Vapour-bath, which had been recommended to the patient, and approved by Mr. Coates. Six hours after the first application, the pain almost entirely abated, nor has there been any violent return of it since. The application was made twice afterwards, and in the course of the three days subsequent to the first, on which it was used, and it has not been since necessary.

I do not know what are the sentiments of Mr. Coates respecting this case; but I have little doubt, from what I saw and heard of the degree of the pain, that had it not been soon relieved, Psoas abscess might have been the consequence, which I own I much apprehended; as the pain was accompanied with a strong inflammatory *diathesis*, and so severe that at that time the lady could not move, or suffer herself to be moved in the bed.

You are at liberty, Sir, to make any use you please of this information, and assure yourself, that with every good wish for your success in establishing a plan of treating many diseases, the principle of which I much approve, I remain

Yours, &c.

A. DODDS.

“ January 8, 1803,
Dorset-street, Portman-square.

TO DR. BLEGBOROUGH.

AN ELBOW-JOINT CASE.

November 15th, one M. Ferries, a poor man, No. 14, Buckeridge-street, St. Giles's, came to me with a diseased elbow-joint of an incredible size, which had the appearance of proceeding from a cold œdematous defluction. The hand and arm, which were much enlarged, had also an œdematous appearance: but the pain, which was excruciating, was confined to the joint. The affection had suddenly commenced two months previous to my seeing him, while he was in bed; for upon awaking one morning, he perceived the enlargement and inability of moving the limb. The habit of the patient was most characteristically strumous. Appearances indeed, altogether, were such, that I had set it down as a case so hopeless, that the Apparatus or even any other mode of treatment, was not likely to obtain credit. I, however submitted to the entreaties of the poor fellow that it should be tried two or three times; and as after these applications, the pain was almost entirely removed, we were induced to go on. The enlargement diminished daily; and though eighteen or twenty applications have not entirely removed the rigidity, or reduced the part to its natural size; yet I have no doubt that he will soon be able to use his limb in the exercise of his business, that of a carpenter, which at one time I thought he would never more be able to do.

GENERAL DEDUCTIONS

ARISING IN SOME MEASURE FROM THE FACTS
ABOVE STATED.

WHEN we contemplate the human frame, and attentively consider its wonderful self-restoring powers; though we can assign no good reason, why it should not continue for ages the same as at any given period, nor point out distinctly the causes of its progress to maturity, or of its waning to decrepitude; yet we cannot be surprised, from the intricate delicacy of its structure, that it should frequently be thrown into disorder, and that obstructions should take place in some of its minuter parts. That this should be the case, will appear the less surprising, when we reflect on the secreting and absorbing systems; the transmission of fluids through the vessels of the eye; the *vasa vasorum* which supply the coats of the blood-vessels, and are in their turn supplied by others so very minute as to escape the nicest inquisition of our sight, even when assisted by the best glasses: the glands too, placed as trusty sentinals to oppose the admission of particles unfit to be received into the mass of circulating fluids, conspire with the other wonders of the microcosm of man to heighten our admiration into astonishment!

Obstructions in such parts give rise to the diseases, a description of the treatment of which,

has been attempted in the preceding pages, on a plan eminently useful ; though by no means entirely new ; except in what regards the comprehensive extent and scientific combination, which, I may venture to say, has now been given to it.

Whoever reflects on the manner in which the circulation of the system is carried on, cannot fail to be struck with the superiority which this treatement in many diseases must possess ; and wonder that a mode of application so useful should not sooner have been invented ; especially considering our long acquaintance with the cupping-glass. In a state of health, the internal and external systems of vessels may be considered as preserving a proper equilibrium. This, however, is always exposed to be changed by the action of external causes on the surface. The effect of this alteration is, as we formerly observed, to produce obstructions, the most common consequence of which is simple inflammation, occasioning a tense, painful swelling of the affected parts ; with increased heat and all the common symptoms of inflammatory fever. Should one of the large joints be attacked, we are presented with an object of attention, the more interesting on account of the complicated structure of the part, and the mischief, which inflammation, if suffered to continue any length of time, generally induces on such a part. From whatever cause the affection may have arisen, and however simple and unmixed at first, if not soon

removed, it is always liable to take on a specific action, modified by any disease to which the system may be disposed; as scorphula, gout, rheumatism, &c. This change from a simple idiopathic, to a specific affection, is often sudden and imperceptible; and white swelling, rigidity of parts and anchylosis, frequently the unexpected consequences. The elbow, but more particularly the knee joints, which from their structure and slight covering of cellular membrane, exhibit a greater variety of morbid appearances, and are more liable to suffer severely from the transitions of temperature, than almost any other part of the system. These affections are in general not more severe, than tedious and difficult of cure; and were any thing necessary to give an additional stimulus to our attentions to them, we need only mention that the other sex, both from their peculiar irritability of system, and from the present fashion and general flimsy texture of their dress, are most frequently the objects of those attentions.* Upon these ac-

* In the Statistical Account of Scotland, article Kirk-patrick Juxta, the substitution of cotton fabrics for the former domestic woollen manufactures of the country, is assigned as one cause of the late extraordinary prevalence of rheumatic and pulmonic affections in that district. We suspect the same unnatural perference of cotton, which at the same time that it greedily absorbes moisture, suffers the natural heat to dissipate, may be assigned as one great cause that such complaints have become endemic throughout the greater part of this Island. For we find Mr. Buchannan in his Account of the Hebrides, stating that, though the unfortunate people called *Scallags* in those islands, suffer every kind of hardship, yet the rheumatism is almost unknown among them; a fact, which he attributes to their general use of wollen shirts.

counts, they constitute a most important class of diseases, which require to be managed with the utmost address and attention, from whatever cause the particular attack was first induced. To anticipate such complicated mischief, as obstructions in the above parts are frequently attended with, every mean which gives hope of relief ought to be early resorted to; and none promises to be more effectual than the Air-pump Vapour-bath, which by removing atmospheric pressure, enlarges the obstructed vessels, and allows them to unload themselves; while all their anastomising branches become capable of circulating a greater quantity of fluid. The activity of the lymphatics of a part, thus relieved, must be greatly increased; and hence the finishing hand is put to an obstruction, the consequences of which, if not speedily removed, must be obvious to all.

The worst kinds of these affections are generally modifications of scrofula; because in those countries, where this disease seldom occurs in the forms of inflammation and obstruction of the mesentery, &c. *before*, and of the lungs and liver *after*, the age of puberty, white-swellings also rarely appear. In no country, that I have heard of, is this disease so common as in this kingdom; and the joints already mentioned are most liable to its attacks. The first symptom is generally a pain diffused over them, particularly increased on motion, with a gradual stiffening of the ten-

dons, and enlargement of the affected part. The exterior veins at last become varicose, and a soft elastic feel and sense of fluctuation take place in the tumor, when pressed by the finger. The farther progress of this affection it is unnecessary to detail; as nothing has hitherto been found to check it in the stage of which we are speaking.

The Air-pump-Vapour-bath, however, offers a mean of cure powerful in its nature, capable of restoring the balance of the circulation and of removing that perseverance of obstruction, which keeps up the affection: but to be completely successful, the application ought to be frequently made, to be suited in degree to the state of the morbid parts, and to be succeeded by the cautious application of friction and stimulants. Blisters and the local detraction of blood are applicable with the greatest propriety, during the incipient stage of such affections, while the existence of inflammation is most obvious and certain.

When the cure has made considerable progress, friction is to be used, and stimulant and astringent applications made to the part, as well as tonic and invigorating remedies supplied to the general system; in order to correct the vitiated state of the habit, and to prevent a recurrence of the disease. To remove that irritability which never fails to accompany the first stage of these complaints, nothing is more essential than good air.

Such is the general outline of the treatment, which I have seen very successful in the cure of

affections of the knee and elbow-joints; and, in every view of the subject, there is little doubt that the Apparatus I recommend is, in almost every stage of them, a powerful mean of relief. In incipient cases I am of opinion it will seldom fail, if managed with that skill and address which must occur as necessary to the minds of *skilful practitioners, in whose hands alone such a valuable acquisition to our art ought to be placed.*

It must not be dissembled that it has in some cases appeared to fail*; but when we take into account, that it has sometimes been under the direction of persons totally ignorant of the laws of the animal economy, and destitute of that spirit of perseverance, generally necessary to overcome chronic affections; the wavering state of mind of irritable patients, and the general prejudice in all ranks of people against every thing new; we shall not be surprised that it should not on all occasions, have obtained the credit it deserves. In many cases†, however, in persons of

*Two cases of an affection of the knee-joint, characterized by an unusual relaxation of the ligaments, with a preternaturally increased latitude of motion, occurred to me. In one of them, the natural swell of the *vastus internus* muscle above the knee-joint, seemed entirely shrunk. In neither of these cases had the Apparatus any effect, though properly persevered in. This affection happily is not of a dangerous tendency; nor do other remedies seem more successful in removing it. See Russell on the Knee-joint, page 158.

† Aware of the delicacy necessary in mentioning names on such occasions, I have omitted their insertion; but have the privilege of making personal references to several, whenever I may find it necessary.

good sense, who submitted to proper management, it has undeniably performed such cures, as to have left a very favorable impression on the minds of several of the faculty, who have witnessed them. A remarkable case of a young lady, who had eight openings round the elbow-joint, from a scrophulous affection, got entirely well by a stiiect perseverance in the application of the Apparatus. This case, as well as other remarkable ones, had a happy termination, under all the disadvantages above alluded to, except perseverance *both* in the attendant and patient.

Mercury is not thought a worse remedy in syphilis, by those who know how to manage it, so as to cure that terrible malady, because it generally fails in the hands of ignorance and empiricism.

With the last observation, I shall dismiss the above subject, and endeavour to pursue one, which it has naturally presented to my mind.

PTYALISM.

One of the most troublesome consequences attending the exhibition of mercury, we find to be Ptyalism; or a morbid discharge of saliva. This, in some constitutions, comes on unexpectedly; and often without regard to the quantity of the medicine used; and when once begun, it

continues for a great length of time, in spite of our efforts to stop it. Various methods have been recommended, but none hitherto have seemed to possess the power of even adding to the comfort of the patient, in this most shocking situation. The nitrous acid, and even borax, can not be depended on. Blisters for this purpose have by some practitioners been much extolled, and by no means on erroneous principles, except in so far as regards the irritation they often produce. The Air-pump Vapour-bath, by its more powerful influence in restoring the balance of the circulation, at the same time that it removes irritability, assists wonderfully in taking off this morbid determination; which has been known under some peculiar circumstances of habit, to have been induced to such a degree, by four or five grains of calomel, as to occasion death.

If this be the case, which I have many reasons for believing, the inference is surely not a strained one, that the Apparatus may be made subservient to a more due and equable regulation of the action of mercury upon the system, that is, that a greater quantity may be more safely thrown through it in a given time, and a more uniform impression kept up upon it, than can possibly be induced without the Apparatus. This consideration lays open a wide field, but having had so large a one already for practice, I have not had many opportunities of making observations in

this; I shall, therefore, leave it to some future occasion and hasten to subjects, on which I can speak with a greater degree of confidence.

CHILBLAINS.

This troublesome complaint, which may be classed under the head of cutaneous diseases, is very frequent in this country. Chilblains are inflammatory swellings attacking the fingers, heels, and toes, arising from extreme cold, and attended with heat, redness, shooting pain, and great itching. They generally attack children and more especially those of a delicate, irritable surface; and who, in consequence of one attack, are always liable to suffer a repetition. The treatment of this complaint consists in inducing a gradual change of temperature, and then applying stimulants in various forms, according to the degree of local derangement in the affected part. From the very nature and cause of this disorder; an obstruction and its consequences form the whole of it; the superiority of the Apparatus for its immediate removal cannot be doubted, from the very principle of its operation. Indeed it will be here found to act like a specific, and the affection cured by a few repetitions, without incurring the danger of ulceration, which so often takes place, under the common mode of treatment.

LEPROSY.

This is the most formidable of the numerous tribe of cutaneous diseases, and often baffles all the powers of our art. It is most frequent in warm climates, and though generally treated of by authors separately from Elephantiasis; yet they may be regarded, at least so far as concerns our present purpose, as the same individual complaint. It consists of a peculiar eruption of white branny scales, with yellowish and sometimes blackish spots on the face, arms, and legs; where the skin loses its hair and becomes thick, scabby and hard. The scales, which we frequently meet with on the head and arms of some drunken people, seem to be of this sort. The parts affected are disfigured with blotches, and generally lose their sensibility entirely. The perspirable matter in this disease, is rendered too viscid by an inflammation of the subcutaneous vessels; and thus an acrid mucus is left adhering to the skin. As the disease advances, the general health begins to suffer; and at length the constitution becomes deeply affected. Glandular swellings are conspicuous in different parts; ulcerations arise as the consequences of these; and the wretched sufferer often falls a victim to the loss of some of the extreme parts. From the dreadfully infectious nature of this disease, it is

shunned more than the plague, in those climates where it makes its appearance. The wretched victims are generally abandoned to their fate by their nearest friends. Its first attack, therefore, is too often concealed in the most guarded manner. Persons of the melancholic temperament, it is observed, are most frequently attacked by it; a circumstance which may lead to some explanation of its nature. In this constitution, an original debility and rigidity of the extreme parts are conspicuous. There is, as it were, a want of expansion in the vessels appropriated to the minute circulation; and the powers of life seem to be concentrated in the larger vessels. Any peculiar acrimony being then superadded to the debility of the system, will of course operate with increased power. The small vessels will come to be obliterated, and all the consequences of obstruction will ensue. As this mischief extends, the affected parts proportionably suffer; and in its ultimate progress, so complete is the annihilation of the circulation, or occlusion of the small vessels, that the fingers and toes have been often known to drop off. From this view of the disease, if tolerably correct, as I should apprehend it is, the plan of treatment is evident. Physicians have proceeded on the idea of connecting an acrimony with leprosy, while in truth this acrimony would appear to be only an accidental and additional cause. Hence the means of cure have generally proved abortive,

and sometimes have encreased the affection; while the warm-bath, considered then merely as an auxiliary, ought to have formed the chief dependence for its removal. If this be the case, which every circumstance in the history of the complaint seems to confirm, the superiority of the Air-pump Vapour-bath, as affording a certain, safe, and powerful mean of restoring the minute circulation, must at least infuse *hope* into the minds of practitioners, that its application will render this *oprobrium medicorum*, no longer formidable in its appearance, or fatal in its consequences. The extent of its application of course must be regulated by the individual circumstances of patients, and the progressive experience of practitioners. When a complete constitutional change is requisite, the practice must be uniform, gradual, and continued; and, as the disease remits, the acrimony, the next object, must be attended to; though this attention, I think, by no means essential in the first instance.

ULCERATION OF THE HANDS AND FEET.

Besides the leprosy under a tropical climate, peculiar ulcerations are found to affect the extremities, particularly the feet; and either are the consequence of other diseases, or arise at times from peculiar and unknown causes. One of the most common of these ulcerations is that which attends the Yaws, or rather succeeds its

termination. I have been told that they generally affect the feet, and frequently render the patient lame for life. The common treatment consists in the use of escharotics and astringent applications. These, however, often fail, and no known means of cure can be depended on. In such circumstances, there cannot be a doubt of the Air-pump Vapour-bath being of the utmost service; if we consider either the principle of its action, or the nature of the disease. Other ulcerations, affecting the same parts, will admit a similar treatment; and if any specific acrimony is connected with the disease, the use of internal remedies, of an alterative nature, may at the same time be conjoined. It will, on all occasions, expedite the cure of such local affections, if it should not of itself prove completely effectual.

TETANUS.

This disease, which when it occurs in this country, as fortunately it seldom does, is equally fatal with palsy, affects the tropical regions with destructive frequency. It consists in an obstinate and almost unconquerable spasmodic contraction of different parts of the body, particularly of the jaw, and hence is termed Locked-jaw. The symptoms, when they extend to different parts of the body, are intolerably painful. They distract the wretched sufferer without intermission; and, compared with the numbers attacked,

the recoveries are extremely few. Spring and autumn in this country, are the most frequent periods of attack; and, where not arising from local injury of a nerve, damp and cold succeeding excessive heat, are considered as the origin of this disease. As the morbid state here consists evidently in a permanent spasm of muscular parts, no remedy offers such a certain mean of inducing relaxation as the Air-pump Vapour-bath. To be effectual, however, it will require, I conceive, the *vacuum* to be made more complete than is necessary for most other diseases; while the degree of heat should also be as great as the patient can well bear, and continued for a considerable length of time. The frequency, continuance and degree of temperature and exhaustion, must be regulated by the morbid circumstances; and, in a disease of such fatality, experience alone can decide to what length the application should be carried.

The latest opinions of practitioners, considering debility as the cause of this disease, enjoin a stimulant and tonic plan of treatment. That debility exists, there can be no doubt; but it is a debility of a peculiar kind, and not to be removed by the ordinary stimulent remedies. The internal system, on dissection, appears no way affected. It is the external moving powers which form its seat, and these are to be acted upon more readily, and powerfully, through an external medium, than in any other way. As this is consonant with common sense, and the

obvious nature of the disease, no external means can offer such certain relief, as a combination of the two great powers of heat and moisture, aided by the removal of whatever can obstruct their operation. With much confidence therefore may this Apparatus be proposed to West Indian practitioners; as at least a powerful auxiliary to the other remedies employed, if not of itself more effectual than any of them. These very natural and obvious reasonings have had much weight added to them in my mind, by applications from many West Indian practitioners for the Apparatus, and by frequent conversations with them on the subject.

AMENORRHŒA.

The suppression of the menstrual discharge is a disease attended with many symptoms of pain, and gives rise to much inconvenience to the sex. This suppression commonly affects their general health. It is induced by a variety of causes, and by none more frequently than by a rigidity of the uterine vessels. Where this is the case, the Air-pump Vapour-bath will be superior to every other means of restoring the evacuation. In these cases it has been common to employ the warm-bath, and to assist its action by the occasional use of emetics; and where the disease has continued and proved obstinate, residence in a warm climate has even been found necessary to accomplish a cure. I never under-

stood that pressure on the femoral artery proved successful: though at one time much recommended, I believe it is now seldom used. The Air-pump Vapour-bath affords a powerful mean of relief without acting on the general constitution, on the one hand, or requiring a long continued application as a remedy, on the other. Indeed so considerable an influence has it over the vessels affected in amenorrhœa, that I am frequently under the necessity of desisting from the use of it, on this account, when making the application for other diseases.

DROPSY.

This disease may arise from a variety of causes; but is in general either the consequence of obstruction in some part, (commonly a principal organ) or of general debility of the habit. In cases of mere debility, the application of the Apparatus, succeeded by friction, will be found an efficacious mode of cure: for by the former, the enlargement will be greatly reduced, and the latter, joined with the usual remedies, will give a tone and vigour to the system, which will prevent any future accumulation. Even in cases where this disease arises from obstruction, much advantage will be derived from the use of the Air-pump Vapour-bath, as a palliative, in taking off the distention of the parts; thus suspending the progress of the disease, and giving time for the action of remedies to remove its cause.

APPENDIX.

Factitious Airs, and their Medicinal Properties.

By the patient, persevering, and enlightened labours of philosophy, during the present age, the existence of various elastic fluids, analogous to common air, have been clearly ascertained; and their beneficial uses demonstrated by innumerable experiments. The following observations, being merely intended as an index to the properties and uses of the factitious airs, and as they will be confined exclusively to those applicable to medical purposes, it is only necessary to notice five different kinds, being all that are comprehended, under that description, viz. the common, the oxygen, the azotic, the carbonic acid, and the hydrogen airs. To point out such properties only in these five, as are calculated to elucidate their action on the human body, will form the limits of my present remarks.

The common or atmospherical air, is indispensably necessary to animal life, to combustion, and to other processes. It is that invisible elastic fluid, which surrounds the earth, and in which we live: and is more or less useful, in proportion to its purity. The quality or goodness of common air, may be ascertained by mixing a certain

quantity with another particular sort of air, called *nitrous gas*, which diminishes its bulk, proportionate to its purity.

The quality of common air, is not the same in all places, nor is it constant in the same place at all times. The variation in the latter case is much more considerable than in the former; yet, upon the whole, it is not very great. But, in caves, mines, crowded rooms, hospitals, workshops, and the like, the air is less pure; yet even in such cases the difference, as indicated by the test of nitrous air, is but trifling, excepting indeed in those places in which the communication with the external air, is almost entirely interrupted.

The quality of common air is not altered by merely heating or cooling, or by keeping, or by being for a time loaded with the vapour of water, nor by rarefaction or condensation; but, it is contaminated principally by respiration, by combustion, by the fermentation and putrefaction of animal and vegetable bodies—by the calcination of metallic substances, by the presence of vegetables, when they are not under the influence of the sun's rays, and by the admixture of every other gas, or permanently elastic fluid, except the oxygen. Vitiating air is capable of being meliorated in various ways, by means natural and artificial. In the former by contact with water, as in rains, dews, &c. in the latter, by numerous methods of ventilation, already well known to the world.

The oxygen air is a fine fluid, that possesses the useful properties of common air in a much more eminent degree; viz. it assists combustion and animal respiration for a much longer time, and with superior energy. When a lighted candle is introduced into a vessel full of oxygen air, its flame becomes larger, and incomparably brighter, than in common air. Its heat is likewise increased to a very great degree. There are several substances from which oxygen air may be extracted by the action of heat or of acids, but those which, upon the whole, yield it in greatest plenty, and are fit to be used, are saltpetre, or nitre, and the metallic calces. The mineral manganese, gives a great quantity of it in an easy manner; it is at the same time a very cheap article, so that, upon the whole, manganese is at present the most eligible substance for the purpose of procuring oxygen air.

Fixed air, or the carbonic acid gas, is absolutely incapable of assisting respiration and combustion, nor is it diminished by nitrous air. It dissolves calcareous earth in the water. It also dissolves iron in water, and in that state, keeps it dissolved. This elastic fluid is produced in a great many natural, as well as artificial processes. It is frequently found in subterranean places, especially in the vicinity of Volcanos and hot springs, where, on account of its great specific gravity, it remains for a considerable time, unless it be dispersed by means of ventilation, &c. It is contained more or less in almost all the mineral

waters—it is abundantly produced in vinous fermentation. A certain quantity is produced by respiration and combustion, and will be found in a variety of mineral substances, and particularly in calcareous earth, as chalk, marble, &c. It has been pretty accurately ascertained, that the fixed air in white marble, amounts to about one-third of its weight. From all these substances a great quantity of this gas may be extracted, by means of heats, or of acids.

Inflammable air, or hydrogen gas, is the lightest of the elastic fluids. It is, as its name imports, a combustible fluid, which may be inflamed by the contact of an ignited body, but will burn only when in contact with common, or oxygen air. Though this sort of elastic fluid be absolutely unfit for respiration, it is not, however, so noxious as the carbonic acid. Hydrogen gas is abundantly produced during the dissolution of animal or vegetable bodies. It also frequently comes out of the earth where inflammable minerals are contained, as in coal mines, and mines of sulphurous metallic ores. But, in all those cases the inflammable gas, by being much lighter than common air, ascends to the upper regions of the atmosphere as soon as it is produced, and leaves the air adjacent to the ground very little, if at all, infected; excepting in vaulted subterraneous places, where, indeed, besides its infecting the common air, it sometimes takes fire and explodes, to the great danger of the

miners. By means of heat or of acids, this gas may be obtained from almost all sorts of bodies, whether they be animal vegetable, or mineral.

Previously to the late important discoveries, the ideas of physicians respecting the different qualities and effects of the atmospherical fluids, were always vague and generally erroneous. The present state of knowledge has, in a great measure, dissipated the clouds, since it has not only demonstrated the reasons upon which certain qualities of the air depend, but has likewise furnished us with the means of procuring airs of opposite qualities, and of any degree of purity, at all times and places ; as also of applying them in all the extensive variety of quality, degree of purity, and length of time.

The factitious elastic fluids are applied to the lungs by the way of respiration—to the stomach and intestines by means of injections, or in combination with fluids, and to the external parts of the body merely by contact. To enumerate all the disorders for which the factitious airs are adapted, and to which they have been less or more successfully applied, would far exceed the limits assigned to these cursory remarks. Suffice it to observe, that there are few disorders that will not yield to their separate or combined powers, when skilfully directed—in suspended animation, in asthma, in consumption, in dropsy, in cutaneous eruptions, in cancer, &c. &c. &c., their superior efficacy has been demonstrated by innumerable experiments.

For a full and masterly development of the power, properties, and medical uses of factitious airs, mankind are peculiarly indebted to the patient, laborious, and profound researches of Cavallo. His scientific knowledge, his predictions, and strength of mind, eminently fitted him for such studies; and, if any thing can add to the value of the preceeding remarks, it will be the acknowledgment, that the most of them are taken from the works of that great and distinguished physiologist.

In closing these remarks on the medicinal uses of *factitious airs*, it can surely require no apology for noticing one or two eminent men, whose persevering and enlightened labours, have contributed so much to bring into practice, this important branch of medical science. Though personally unknown either to Doctor *Thornton*, or Doctor *Hooper*, medical readers can be no strangers to their works; and in them will be found abundant proof of benevolent zeal employed to serve the best interests of humanity, and directed by that sound and enlarged wisdom, that can scarcely fail to ensure success. Spurned at selfish and sordid considerations, and soaring above the tainted region of prejudice, they have shed new lights on science, and set an example to the medical profession, which, if generally followed, promise to confer the greatest possible benefits on mankind. Their works speak for them, and will prove their best, as well as most lasting panegyric.

MEDICAL ELECTRICITY.

THE science of medical electricity has attained to its present perfection, by the unremitting and successful efforts of a class of modern philosophers, of the most benevolent cast of character. Though the tendency of their labours could be no other than to lessen the *quantum* of human suffering, and add to the best of human enjoyments, they were assailed by the malignant clamours of ignorance and prejudice, and not a little thwarted in their course by even the liberal part of the faculty, who, by a too indiscriminate and injudicious application of medical electricity, brought for a time discredit on its character, and retarded its progress. Various causes have indeed concurred to prevent the universal adoption of this most salutary and powerful medical remedy. Among the rest may be noticed, the ignorance of practitioners on the nature or stages of those diseases to which it is applicable—unskilfulness in the *modus operandi*—and even to the want of perseverance on the part of the patient. To these may be added the reluctance evinced by some of the faculty, to resort to this remedy, while hopes remain of effecting a cure, by any other means. Yet even in these forlorn cases, the power of electricity has been fully proved, by the extraordinary and marvellous cures it has

accomplished. The following extract from the last report of the London Electrical Dispensary, will establish beyond the power of contradiction, the truth of this assertion.

“It appears indeed from a careful examination of its records, that nearly as many patients are relieved and cured, in proportion to the numbers admitted, as are dismissed from other Medical Institutions where electricity is scarcely ever employed. If the effects of other medicines, therefore, are well ascertained, the benefit of this powerful agent cannot be demonstrated upon grounds less uncertain. It is proper also to remark that many are relieved and cured at this Dispensary who have been using medicines for weeks and months in other charities without effect; and it may be further added, that the greatest number of cases which come under care are those called *Chronic*, whose cure is by far more tedious and difficult than the *Acute*, which in other Dispensaries abound.”

“*Patients admitted from Michaelmas 1793, to Lady Day, 1818.*

	8,366
Whereof have been Cured	3,815
Relieved	3,217
Discharged	1,216
Now under Cure	118
	8,366”

With such a cluster of convincing proofs, as these, of the salutary and extraordinary powers of medical electricity brought before the public, it might be imagined, that the most prejudiced, ignorant, and incredulous, would cease to be haunted with doubts and apprehensions, either of its safety in application, or of its certainty in producing a beneficial result. Patients, however, are naturally much influenced in their choice of remedies by the opinions of the faculty; and it is to be lamented that many of the latter, for various reasons, are not over forward in recommending medical electricity. Some few may be ignorant of its powers; and many, from the multiplicity of their other avocations, may have no leisure to study the science. Yet, it is not for want of publicity being given to electrical operations, that the science remains unknown to medical practitioners; for it has long been introduced into hospitals and army practice; and has also, in the open face of day, been successfully employed by the Royal Humane Society, in the resuscitative process of restoring suspended animation. Foreign practitioners too, have long and generally applied its powers, both in medical and surgical cases, with astonishing success.

In every disorder to which electricity is applicable I have had opportunities of witnessing its effects, both in the incipient and protracted state of the disease—in instances of infancy, youth, manhood, and old age; and in no case whatever

has the slightest injury resulted to the patient. On the contrary, I have found its beneficial effects in almost every application, but particularly so in the delicate and painful diseases peculiar to females at certain critical periods of life—in rheumatism, in paralysis in all its varieties, in sciatica, lumbago, &c. The modes I have adopted in the application of electricity, have been varied according to the age, constitution, habits, and sensibilities of the patient; and also by other circumstances connected with the nature and stage of his disorder.

The old mode of electrifying was by giving powerful shocks of two-gallon jars, and since, the charge has been diminished to quarts and pints. I have, however, by a novel, and, I trust, a happy improvement, done away with the practice of shocks altogether, except in cases of great local insensibility, in which a strong action is necessary to rouse the dormant powers. My general plan is to pour into the system a diluted stream of electricity in its mild and expansive form, directing the electric current to and through the diseased parts, without producing any of those shocks, which, where they do not injure, must at least agitate and alarm the timid. My system of treatment is founded on the laws of equilibrium, of action and re-action; my primary maxim being never to debilitate or oppress the natural energies, but to soothe the irritability of local inflammation, and to aid nature in awakening the

dormant powers. It is my practice to mark the immediate effects and subsequent results, by the expression of the eye and of the countenance—by varying the mode of operation according to the feelings of the patient—by making minute enquiries as to the effects felt from time to time—a mode, which, of all others, is the best adapted to procure the *instructive counsels of nature*, in all cases the best and *most unerring guide*. It has been an object of my most anxious attention to provide machines of the greatest powers.—Apparatus, in all respects completely adapted to every possible purpose, and which, after much labour and expence, I have the satisfaction to know I have so fully accomplished, that I can produce effects by my mode of operation, much more efficacious than the *violence of shocks*, without subjecting the patient to either dread or danger.

MEDICAL GALVANISM.

THE discovery of the electric influence on the animal fibre, will ever be considered as a most important æra in medical history. The honor of that great discovery, it is acknowledged on all hands, belonged to Galvani, formerly professor of Anatomy at Bologna, and from whose name the denomination of this new branch of science is derived. That celebrated phisiologist published, about the year 1790, such an account of various new and extraordinary experiments in animal electricity, as soon drew the attention of philosophers, in all parts, to the investigation of so curious and interesting a phenomenon. It was natural enough to expect that the earliest author of Galvanic experiments, should also be the first to establish an hypothesis on the phenomena he had discovered. While, however, the novelty and importance of Galvani's experiments were universally acknowledged, his hypothesis had to encounter a very formidable opposition. That sagacious and profound enquirer thought he saw in the Galvanic action a phenomenon essentially dependent on the constituent parts of the animal. His antagonists, at the head of whom appeared the celebrated Volta, professor of philosophy in the University of Pavia; who maintained that the phenomenon manifested itself

solely by the intervention of the irritable and sensible fibre, and is not subordinate to the vital energy. In a cursory review, like this, of a subject so important, it may be sufficient to observe that, in the physical sciences, the facts and results are certain and immutable, but the hypothesis which are employed to explain the mode by which they are generated, are susceptible of almost infinite variety.

The great physiologist, Sir H. Davy, completes his definition of this wonderful and useful science in these words—"Galvanism relates to the phenomena, both Chemical and Electrical, produced by the contact of different conductors of Electricity, forming a perfect circle with each other." It is not my design here to dwell on the philosophical purposes to which Galvanism can be made subservient, and shall therefore content myself at present, with noticing its power to prevent damage to copper-bottomed ships, that being an object of great national importance. In a medical view, Galvanic electricity merits our attention beyond any thing to be discovered by mere philosophical research: its peculiar excitation of the animal functions, offers an instantaneous and powerful stimulus, in many cases, where other means cannot be so readily applied, or produce such efficacious and beneficial results. Eminent writers on Medical Electricity, have concurred in recommending Galvinism in the following cases:—in palsies of the extremi-

ties, occasioned by the debility or cessation of the nervous action,—in those even which have been primarily determined by other causes, such as the compression of the brain.—It is adapted to cases of debility of sight, Gutta Serena, and nervous deafness, when these complaints are ascribable to a want of excitability in the optic and auditory nerves ; in involuntary action of the muscles, in contractions, cramps, tetanus or locked-jaw, indolent tumours or serophulous swellings, &c. When the extraordinary influence of the principle of Galvanism, on the muscular fibres of dead animals was first observed, it was natural to expect that great advantages would result from its employment in those particular cases in which life is not extinguished, but its influence on the animal organization merely suspended. The divided part of the animal, when cut off from the sources which might be deemed absolutely requisite to the support of its living energies, still evinces manifest signs of the existence of a vital principle, when roused into action by Galvanism. When life is merely suspended, whether from drowning, strangling, or exposure to noxious gases, and the principle of irritability not destroyed, the stimulus of Galvanism, skillfully employed, may rouse the dormant energies of vitality, and restore the system to its active state. In short, Galvanism has been, and is still held, to be the just and unerring *criterion of vitality*.

Dr. Babington's interesting case recorded in the *Medico Chirurgical Transactions* of suspended animation, occasioned by exposure to fumes of charcoal is generally known to the faculty, and furnishes a striking illustration of this remark—"When nature appeared sinking rapidly, on passing the galvanic shock through the chest, the patient instantly, to the surprise of the medical men, drew his breath deeply—the muscles of the abdomen were seen to re-act, though feebly, while those of the face were slightly convulsed, and the eye-lids were raised—at each successive application of this powerful agent, the respirations were more forcibly performed, and the stroke of the artery at the wrist rose in the same proportion." In the case of Foster, also, a condemned criminal; five or six hours after his execution, such motions were produced by galvanism as led the practitioners who were present to suppose, that even at this late period, a recovery might by perseverance have possibly ensued. In the reports of the Royal Humane Society, numerous instances are found recorded in which the agency of the vital air, electricity and galvanism have been found effectual means in the recussitative process of suspended animation. Science is greatly indebted to that distinguished medical philosopher Mr. Wilkinson, for his laborious researches and his interesting work on galvanism. The reporters of the Institute of France, have justly ascribed to M. Le Gallois's

physiological work to be the most important since the days of Haller; Dr. W. Philip's work, much more deserves this encomium, it places him unquestionably on a footing with all living experimental physiologists, and while it conveys us considerable distance on the road of science, also conveys us to the possession of no small *practical benefit*, and directs to the possession of much more." See the annals of Medicine and Surgery, vol. 2, page 271. The application of Dr. Philip's discoveries is very striking, by depriving the lungs and stomach of a portion of their nervous influence as in the experiment made on Rabbits by the division of the eight pair of nerves, dysnoea and dyspepsia were *occasioned*; and then *removed* by substituting galvanism for the loss of nervous power. From these facts Dr. P. thought of employing galvanism in humoral asthma, connected with dyspepsia.—“ I have employed galvanism in many cases of habitual asthma, and almost uniformly with relief. It is remarkable that in several who had laboured under asthmatic breathing from ten to twenty years it gave relief quite as readily as in more recent cases, which proves the *habitual difficulty of breathing even in the most protracted cases is not to be ascribed to any permanent change having taken place in the lungs.*

Of the above cases of asthma many occurred in the town where I reside, where the patients had been obliged to abandon their employments in consequence of it, and some of them, from its long

continuance, without any hope of returning to regular work ; most of them had tried the usual means in vain. By the use of galvanism they were relieved in different degrees, but all sufficiently to be restored to their employments. I have seen several of these lately, who, although they have not used the galvanism for some months, said they continued to work without any inconvenience. Some, in whom the disease had been wholly removed, remain quite free from it ; some have had a return of it, and have derived the same advantage from the galvanism as at first. In some labouring under the most chronic forms of phthisis, in whom the symptoms had lasted several years and habitual asthma had supervened, the relief obtained from galvanism was very great, notwithstanding some admixture of a pus-like substance in what was expectorated.

Observations similar to the foregoing, there is reason to believe *will be found to apply to dyspepsia*, but as I have made but few trials in this disease, except where it was complicated with asthma, the removal of which no doubt contributed to a more healthy action of the digestive organs, I *cannot yet speak with certainty* of its effects in this disease, though I have repeatedly seen from the *same effect on the biliary system which arises from calomel* ; a copious bilious discharge from the bowels coming on within a few hours after its employment. This seldom happens except where there appears to

have been a failure in the *secreting power* of the liver, or a *defective action in the gall tubes.*”

The diffidence which this great and enlightened writer expresses at the close of these remarks, first suggested to me the propriety of ascertaining so important a fact, and which by abundant opportunities, I have now satisfactorily accomplished.

I have had the heartfelt satisfaction of succeeding in various extraordinary and desperate cases, to which the galvanic influence had been before but partially applied. I have tried its effects not only in Asthma connected with Dyspepsia, but in Dyspepsia and chronic Hepatitis, and Constipation, with complete success. Several patients who had laboured under the former complaint from 3 to 22 years, were all relieved by the first operation, and cured within 3 weeks. But in Dyspepsia, the curative powers of galvanism have been so astonishing, as even to surpass my own expectation. Numerous cases of Dyspepsia, combined with the most distressing symptoms—with palsy, hypocondria, vertigo, deafness, impaired vision, and a train of other afflicting maladies, have been cured in a short time. Most of those cases had been sent to me by the faculty, an account of which, at the particular request of the patients themselves, I shortly intend to publish.

If so important a benefit can be obtained by so harmless a *natural stimulus* as galvanism,

which so far from exciting any painful feeling, when properly directed, produces only a kindly genial glow in the region of the stomach, liver, lungs, and bowels—how preferable must such a remedy prove to any mercurial preparations, which seldom fail to *sap the foundation of the most robust constitution, to hurry on premature old age, and not unfrequently produce sudden death.* On this part of the subject, let the following opinion of Dr. Trotter be carefully perused, whom, for scientific views, for profound skill, and vast experience, is not excelled by any physician of modern times.

Dr. Trotter on the nervous temperament states it as his decided opinion, that “Mercury is the most *dangerous* of all frequent purges, it sooner exhausts the irritability and vital power of the intestines, than any other metallic oxide except arsenic—it never fails in the end to add to the disease—volumes have been written on diseases supposed to have originated from the use of mercury in Lues venerea—yet strange to relate its *most common consequences, Dyspeptic and nervous affections*, are scarcely mentioned. I firmly believe all the derangements which it occasions in the body, are *small* when compared with the *injury done to the nervous system and digestive powers*—yet some physicians and surgeons fly, even in *common cases* to one of its most dangerous preparations *hydrar. mur.* and seem to overlook its ultimate effects on the constitution. It has often been my lot to witness these effects in the

practice of others, for of *fifty thousand cases* of Lues venerea which I have attended I am convinced not one of the number required this acrid mercurial—Hæmoptisis ending in Phthisis was a frequent sequel to this treatment.”—He further observes—“that in what are termed bilious, liver, and stomach complaints,—if *much nervous predisposition* exists, mercury must do a *great deal of harm* and *add* to the mischief, for this mineral, after long use, besides *exhausting* the *nervous energy*, is known to affect *the bones, and render them friable*. A poison so subtle and active, thus consumes the vigor of the body, and brings on premature senility. These hedious effects are most probably produced by the mercurial oxide first depraving the digestive powers, preventing assimilation of the chyle, and vitiating sanguification.”—Such are the distressing and destructive effects ascribed to mercury by a writer who had the best of all possible opportunities (from the high official situation he long held of Physician to the Fleet) of forming a correct opinion on the subject. This view of a matter of such vital importance to the health, happiness, and life of man is by no means solely sustained by the authority of Dr. Trotter great as that authority unquestionably deserves to be held. It is also the opinion of the most eminent of the faculty, and particularly of Mr. Abernethy, a name well known to science and the world, that most of the disorders incident to the human frame originate in the

deranged and debilitated state of the stomach and bowels. Hence their first prescriptions are generally designed to clear the *prima via*, and excite their powers to healthful action. In this just view then of medical science, what can be more safe and effectual as a remedy than the employment of an agent which instantly grapples with disease at its source, and the operation of which is at once easy, safe, and effectual. If other errors in medical practice can be said to have “slain their thousands, *calomel has slain its tens of thousands.*” If then the pernicious and destructive use of mercurial preparations can be superseded by the genial administration of this powerful stimulus, what devastation of constitutional vigour might not be prevented? What disease, suffering, and wretchedness, might not mankind escape? This great desideratum, I feel confident in asserting, has been obtained; for I have had the sincere satisfaction to find by experience, that, in a variety of cases to which mercury had been formerly too often applied, the galvanic treatment has proved completely safe and successful.—I feel justified in asserting that the whole *Materia Medica* may be searched in vain to find such a *Panacea* as the galvanic influence in torpor of the stomach, liver, and bowels.

The benefits and blessings which medical electricity and galvanism are adapted to confer on the afflicted, cannot long remain a matter of doubt and scepticism, with any description of

the public. They will, by their power and efficacy, speak in a language not to be misunderstood, and growing confidence will banish incredulity. As great skill and experience, however, are indispensibly requisite to their successful administration, it may not be deemed impertinent in a publication of this kind, to submit to the reader a few facts, that may enable him to judge of my fitness and capability, for a professional practitioner in medical electricity.

About fifteen years ago, I withdrew from the busy haunts of men to enjoy the quiet of a country life, and to devote myself to the study of philosophy in all its branches. Blessed with competence, I was contented and tranquil, and felt no wish to encrease in wealth. My only ambition was to be useful to my fellow-creatures. Impressed with a conviction of the comparative insignificance of theoretic knowledge, that could not be rendered practically useful, I determined from a higher motive than the love of gain, to study with a medical friend of considerable science and professional skill, in order to qualify me to administer with effect, to the necessities of the afflicted poor. Another medical friend, having kindly engaged to co-operate with me in that well-meant design; we determined to apply electricity and galvanism to every case, where these powerful agents were likely to be useful. By this plan of gratuitous practice, we were soon furnished with abundant opportunities of making fair and complete trials of their

efficacy, even in a variety of *desperate cases*. Success, beyond my expectation crowned our labours, and I found an ample reward for all my services, in the conscious satisfaction, of being made an humble instrument in the hands of Providence, of restoring the blind, the deaf, and the lame, to sight, hearing, and the right use of their limbs.

Since that period, I have continued to devote my time to the study and practice of medical electricity and galvanism, in the various parts of England and Wales, where I have chosen, from time to time, to fix my residence. In most of those places where I found dispensaries, I tendered my tuitous services, which were readily accepted, and numerous extraordinary cures were performed with the sanction, and under the eye of the faculty. To the rich as well as the poor, my services were rendered beneficial, and I enjoyed the exquisite pleasure of bestowing without receiving—realizing the truth of that delightful maxim, that—"It is more blessed to give than to receive."

Prior to my establishing myself in Town, I visited Southampton, where, there being no dispensary, I proposed to the Physicians of that place, the establishment of an electric and galvanic institution, for the relief of the poor, and the benefit of the public at large. This proposition was readily acceded to by the Physicians of the place, all of whom, together with most of

the Surgeons there, patronized the undertaking. I had the happiness to succeed in placing the establishment on a liberal footing—rich patients were made to contribute to the expence of affording relief to the poor. My directions and operations were gratuitous, and in five months, no less than three hundred cases were placed under my care. Many of these cases were altogether hopeless, but my continued success, inspired me with an ardour and perseverance, that nothing could abate.

The encouragement, liberality, and kindness, I experienced at Southampton from Doctors Waithman, Hacket, and Middleton, and the respectable surgeons of the town, have made an indelible impression on my mind. A knowledge of my success in that quarter, induced some of my particular friends to urge me to settle in the capital, and to adopt the practice of medical electricity, and galvanism, as a profession. Conscious that my labours might, by the blessing of heaven, be rendered eminently beneficial to various classes of the afflicted, and in many cases too, where the efficacy of other medical prescriptions, are at best but problematic, I resolved to follow their advice. My establishment in Southampton Row, has therefore been fitted up on a scale adapted to extensive practice, and supplied with as complete an assortment of Apparatus, as mechanical ingenuity could furnish, or money procure. Though such an esta-

blishment can only be supported by a fair remuneration for services, yet, as the alleviation of human sufferings, and not fees, is my primary object, my terms, I trust, will be found neither illiberal nor exorbitant. However singular it may sound in the ears of selfishness, and however much it may be doubted by those "whose God is gain," I can truly say, that my great motive for engaging in this arduous undertaking was, to be useful to mankind, in my day and generation. My friends, who know me, will not distrust the sincerity of this declaration; nor will my patients be forward to charge me with making gain the object of my idolatry. To strangers I can venture to promise the same attention to their cases, and the same solicitude for their recovery, which I have always found myself, from feelings of humanity, bound to observe to all.

Since I formed my establishment in town, it is but justice to many eminent persons of the faculty to acknowledge, that they have shewn me not only every mark of friendly attention, but have given me the most unequivocal proofs of their approbation, in their recommendation of a number of interesting cases, connected both with the practice of medicine and surgery, most of which, I have the pleasure to know, have been successfully treated. My particular acknowledgments for friendly aid and kind services, are specially due to Doctors Bateman, Laird, and

Roget,—to Doctors Sims, Southey, Buchan, Davis, and Scudamore ; to Messrs. Cooper, Pearson, Blair, Sir William Adams, Maule, Ogle, Hill, Anderson, Andrée, Tarrat, Pennington, and James.

Here it cannot be improper to offer a caution or two to those who may hereafter become patients—first, to beware of the effects of deferring the application of a remedy, which, in the first stages of the disorder would cure, but which, when tried as a dernier resort, might only relieve. Second, the sooner applied after the attack of disease, the sooner is the relief afforded, and the cure effected. Third, to dismiss from the mind all apprehension of pain and danger, either from Electricity, Galvanism, Factitious Airs, or the Air-pump Vapour-bath ; all of which are, by a peculiar mode of application, rendered in many cases rather agreeable to the feelings, and in many more, so gentle, that an infant at the breast will receive no painful sensation from their use.

As there are various cases which daily present themselves to my notice, for the cure of which electricity, galvanism, and the medical gases, are powerfully efficacious, I now employ these agents at home, from the hours of eleven and five, the and Vapour-bath at my own house, which affords ample accomodation for those patients who may for *the night* prefer placing themselves under my own roof ; or otherwise, by appointment at their own residence. *I act agreeably to*

my own judgment where patients consult me, and have no medical friend to advise them—but, where gentlemen of the faculty recommend patients, I pay the most scrupulous and minute attention to their directions. I do not traffic in drugs, nor receive fees for prescription, but confine myself exclusively to my own province, receiving fees for operations alone. I have only to add, that, when leisure will permit, I intend to publish a work on Medical Electricity, and Galvanism, Factitious Airs, and the Air-pump Vapour-bath, accompanied with numerous cases, demonstrating their powerful efficacy, in a variety of disorders, especially those of the nervous system.

BRIEF SYNOPSIS

OF THE DISEASES WHICH HAVE BEEN CURED BY THESE

PHILOSOPHICAL REMEDIES.

PALSY—general and partial, numbness, loss of voice, of taste, of smell, difficult swallowing, paralysis of the bladder, &c.

SPASM—Epilepsy, St. Vitus's Dance, Hysterics, Wry Neck Tetanus, Locked Jaw, &c.

GOUT—atonic, misplaced, regular and retro-cedent.

RHEUMATISM, acute and chronic, Sciatica, Lumbago, &c.

CONTRACTIONS of the Tendons, and rigidity of the Muscles.

DYSPEPSIA (indigestion) *in the worst stages of the disease.*

CONSTIPATION, (costiveness) or torpor of the Bowels.

TORPOR OF THE LIVER, or *deficient Biliary Secretion.*

JAUNDICE, from Biliary Concretions, or spasmodic constrictions of the Biliary Ducts.

ASTHMA—Spasmodic or Habitual, *of the longest continuance.*

DROPSY, (general and partial) of the Head, Chest, Abdomen and Scrotum, and every want of action in the Absorbents.

NERVOUS HEAD-ACHE, AGUE, PNEUMONIA, PLEURISY, CONSUMPTION, HIPOCHONDRIA, &c.—Croup, Measles, Worms, Cutaneous Eruptions, Ulcers, Bronchocele, Abscess, Tumors, Cancer, Scirrhus Testes, Induration of the Prostrate, Gleet, Scrophula, Knee Cases, Sprains, Bruises, *the delicate and painful Disorders peculiar to Females, especially the young and the middle aged—and many of the Diseases incident to the EYE and the EAR.*

JUNE 20th 1818.

31, SOUTHAMPTON ROW,
RUSSELL SQUARE.

FINIS.